

\*\*\*\*\*DRAFT\*\*\*\*\*



<i>Code</i>	<i>Damaging Agent</i>	<i>Primary Host</i>	<i>Code</i>	<i>Damaging Agent</i>	<i>Primary Host</i>
AS	Spruce needle beetle	Substrate	1	Douglas-fir beetle	Douglas-fir
BB	Western blackheaded budworm	Hemlock, spruce, true fir	2	Douglas-fir engraver	Douglas-fir
BM	Modoc budworm	White fir	3	Spruce beetle	Spruce
BP	Sugar pine tortoise	Lodgepole, ponderosa pine	4	Fir engraver	True fir
BS	Western spruce budworm	True fir, Douglas-fir, spruce	6B	Western balsam bark beetle	Sub-alpine fir
BY	Bynum's brightlight/ophidroma	Western, Douglas-fir	6J	Mountain pine beetle	Jeffrey pine
CH	Larix	Western, Douglas-fir	6K	Mountain pine beetle	Krohnbe pine
HL	Western hemlock looper	Western hemlock looper	6L	Mountain pine beetle	Lodgepole pine
LD	Large scale forest looper	Western hemlock	6P	Pondosa pine beetle	Pondosa pine
LL	Black pitch leaf scale	Western larch	6S	Mountain pine beetle	Sugar pine
MD	Douglas-fir budmoth	Pondosa pine	6W	Mountain pine beetle pine	Pondosa pine
ML	Larch budmoth	Western larch	6W	Lps spp.	Pondosa, lodgepole pine
NE	Needle scale	Douglas-fir	6W	Western spruce beetle	Pondosa pine
MS	Spruce budmoth	Jeffrey	9	Silver fir beetle	Silver fir, true fir
NJ	Needle miner	Douglas-fir	BEAR	Black stain root rot	Pondosa pine
NK	Needle miner	Krohnbe pine	10	Flameheaded wood borer	Douglas-fir
NI	Needle miner	Lodgepole pine	11	Basal stain root rot	Pondosa pine
NP	Needle miner	Conifer	PL	Port Orford cedar root disease	Port Orford cedar
NT	Needle miner	Pondosa pine	RD	Root disease	Conifer
NS	Needle miner	True white fir	WATER	Water damage	Conifer
NT	Needle miner	Western white pine			
OW	Western oak looper	Oaks			
PB	Pine Buttrfly	Pondosa pine	AB	Balsam woolly adelgid	True fir
PI	Pine needle cast	Pondosa pine	AC	Cooler spruce gall adelgid	Spruce, Douglas-fir
PH	Phantom hemlock looper	Hemlock, Douglas-fir	AD	Leaf discoloration	All species
PD	Pondosa moth	Pondosa, Jeffrey pines	BR	Brister rust	Five-needle pines
PN	Pine needleash hopper	Pondosa, Jeffrey pines	DR	Drying canker	Hemlock
PS	Pine needle scale	Pinus	AS	All species	All species
PC	Needle cast larch	Conifer	GP	Gouty pitch midge	Pondosa pine
S	Spider mite	Conifer	HAL	HAL	All species
SA	Needle cast	Conifer	HD	Hardwood decline	Hardwoods
SD	Sawfly	Douglas-fir	NF	Areas not flown	All species
SP	Sawfly	True fir	OUT	No damage detected	Hardwoods
SH	Sawfly	Krohnbe pine	PMD	Pacific madrone decline	Pacific madrone
SK	Sawfly	Lodgepole pine	LD	Leaf rust in poplars	All species
SL	Sawfly	Red belt	SLD	Side	All species
SM	Satin moth	Aspen	UNKD	Unknown defoliation	All species
SNC	Swiss needle cast	Pondosa pine	UNKM	Unknown mortality	All species
SW	Swiss needle cast	Western larch	WATRS	Water damage	All species
SW	Sawfly	Western larch	WIND	Wind-thrival	All species
TA	Tent caterpillar, alder	Alder	WINTER	Winter Damage	All species
TC	Tent caterpillar, other	Hardwoods			
TM	Douglas-fir huskmoth	True fir, Douglas-fir			

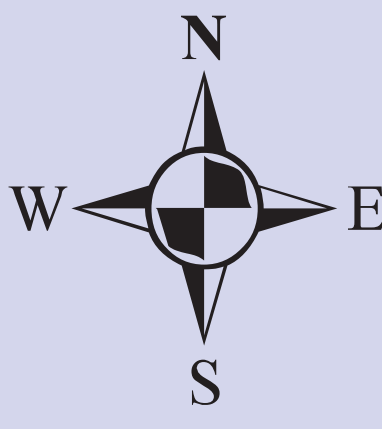
The cause of damage is described by a symbol listed above and is followed by: number of trees affected, number of trees/acre affected (example: SA4).

## 2003 Draft Insect and Disease Aerial Survey Data

USGS 100K Quad - Toppenish; 5F  
2003 Aerial Insect and Disease Detection Survey  
Mapscale: 1:100,000  
Date: August 22, 2003



Map base data is from the National Geographic TOPO! series for Oregon and Washington.



## How the Aerial Surveys Are Conducted

Data represented on this map are based on trees visibly affected by forest insects and diseases detected and recorded during aerial survey flights conducted by the USDA Forest Service and the Washington Department of Natural Resources. Observers have just a few seconds to recognize the color difference between healthy and damaged trees of different species; diagnose causal agents correctly; estimate intensity; delineate the extent of damage; and precisely record this information on a georeferenced, digital map. Air turbulence, cloud shadows, distance from aircraft, haze, smoke and observer experience can all affect the quality of the survey. These data summaries provide an estimate of conditions on the ground and may differ from estimates derived by other methods.

The aerial survey provides information on the current status for many causal agents, and is important when examining insect activity trends by comparing historical and current survey data over large areas.

Overview surveys are a 'snap shot' in time and therefore may not be timed to accurately capture the true extent or severity of a particular disturbance activity. Specially designed surveys with modified flight patterns and timing may be conducted to more accurately delineate the extent and severity of a particular disturbance agent. Special surveys, such as Swiss needle cast surveys, are conducted when resources are available to address situations of sufficient economic, political or environmental importance.

DIRECT ALL INQUIRIES TO:

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**\*\*\*\*\*DISCLAIMER\*\*\*\*\***  
The insect and disease data presented should only be used as an indicator of insect and disease activity, and should be ground-checked for precise location, extent, severity and causal agent.

Color coded polygons show locations where trees were recently killed or defoliated. Intensity of damage is variable and not all trees within coded polygons are dead or defoliated.

The cooperators reserve the right to correct, update, modify or replace GIS products without notice. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.